I CLAIM:

1. A system for monitoring exposure to impulse noise, comprising:

a sound-sensing device operable to sense impulse noise;

a storage module operable to store the waveform of the impulse noise sensed by the sound-sensing device;

a processor operable to calculate one or more noise parameters of the impulse noise from the waveform; and

a user interface program operable to display said one or more noise parameters selected by a user.

2. The system of claim 1, wherein the noise parameters are selected from the group comprising energy, spectral distribution, kurtosis, number of impulses, peak pressure level, rise time, duration, and Auditory Hazard Units.

3. The system of claim 1, wherein the user interface program has one or more graphical user interface elements that allow for user selection of one or more of said noise parameters to be displayed by the user interface program.

4. The system of claim 1, wherein the sound-sensing device is operable to sense impulse noise levels having a peak pressure level greater than 146 dB.

5. The system of claim 1, wherein the processor calculates a corrected peak pressure level based on the number of impulses detected during a specified time period.

6. The system of claim 1, wherein the processor calculates energy flux according to the equation $E = \frac{1}{Z_0}\int_0^T p(t)^2 \cdot dt$.

7. The system of claim 1, wherein the processor calculates kurtosis according to the equation $\beta(t) = m_4/(m_2)^2$.

8. The system of claim 1, wherein the processor calculates the duration of an impulse, wherein the duration comprises either the A-duration, B-duration, C-duration, or D-duration of the impulse noises.

9. The system of claim 1, wherein the sound-sensing device comprises a dynamic pressure sensor.

10. The system of claim 1, further comprising a hearing protector having an ear piece, the sound-sensing device being embedded within the ear piece.

11. The system of claim 1, further comprising an analog-to-digital converter operable to receive an analog signal representative of the impulse noise from the sound-sensing device and convert the analog signal into a digital signal, the analog-to-digital converter having a sampling rate of at least 200 KHz, and wherein the storage module stores the digital signal from the analog-to-digital converter.

12. A method for monitoring exposure to impulse noise, comprising:

detecting impulse noise;

recording an acoustic waveform of the detected impulse noise;

calculating one or more noise parameters of the detected impulse noise from the recorded waveform; and

selecting, via one or more user-interface elements, one or more noise parameters;

displaying the selected noise parameters; and

assessing the potential hazard of the impulse noise through analysis of the selected noise parameters.

13. The method of claim 12, wherein the noise parameters are selected from the group comprising energy, spectral distribution, kurtosis, number of impulses, peak pressure level, rise time, duration, and Auditory Hazard Units.

14. The method of claim 12, comprising detecting impulse noise levels having a peak pressure level greater than 146 dB.

15. The method of claim 12, comprising calculating the peak pressure levels of the detected impulse noise and calculating corrected peak pressure levels to account for the number of impulses detected during a specified time period.

16. The method of claim 12, comprising calculating energy flux from the recorded waveform according to the equation $E = \frac{1}{Z_0}\int_0^T p(t)^2 \cdot dt\left[J/m^2\right]$.

17. The method of claim 12, comprising calculating kurtosis from the recorded waveform according to the equation $\beta(t) = m_4/(m_2)^2$.

18. The method of claim 12, comprising calculating the A-duration, B-duration, C-duration, or D-duration of a detected impulse.

19. The method of claim 12, further comprising displaying a time-varying graph of the recorded waveform.

20. The method of claim 12, comprising detecting impulse noise with a dynamic pressure sensor.